IMPACT OF SHARED HEALTH SERVICES ON SERVICE QUALITY AT HEALTH CENTRES IN KAMPALA CAPITAL CITY AUTHORITY (KCCA)

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ABSTRACT

The study aimed to assess whether sharing of health services improved service quality in health centers in Kampala Capital City Authority (KCCA). With multi-stage sampling, data was gathered by face to face interviews, via translators from residents in the five divisions of KCCA, using a questionnaire. Schedules were made with Local Council I chairmen, and support to fill in the questionnaire was given to the respondents. The statistical methods used for analysis included a Chi-square, Spearman correlations and hierarchical regression.

The study found that regarding tangibility, sharing health services significantly determines the number of modern medical equipments (p=0.000) and the number of medical personnel that had a neat and professional appearance (p=0.000) but did not determine the number of visually appealing health facilities (p=0.386).

Recentralizing health care changed the mode of delivery. Health workers were responsive, reliable and provide better care for patients. There was increased availability of basic medical equipment, and health workers were neater in appearance with increased confidence and hence were better able to provide for the safety of residents.

Keywords: Healthcare, KCCA, shared health services, service quality, Uganda

Introduction

Shared services are defined according to Oakerson (1), as "agreements involving two or more public organizations cooperating to render services for the common good of the people". Health service quality refers to the four basic components in the health care system, the personal, the technical, the atmosphere and the organizational quality (2).

The quality of healthcare in Uganda is not determined by the people's ability to pay for the services, but by the health structure that the government puts in place to ensure that all Ugandans receive better health care as a way to poverty eradication (3, 4). Uganda has a population, estimated at 24.4 million people, and it is supported by a medical workforce of 40,000, of which 40% are employed by the private sector (5, 6). Of the total number of health workers, with only 2,919 are medical doctors and 20,186 nurses and midwives, an increase in life expectancy at birth from 46.9 in 2001 to 51 years was seen in 2006 (7).

Uganda is among the countries in sub-Saharan African that still encounter challenges in reduction of mortality rates. Major direct sources of death among adults being Human Immuno-Deficiency Virus (HIV) infection and the Acquired Immuno-Deficiency Syndrome (AIDS) which are responsible for 20% of the mortality. Malaria continues to be the most significant illness in economic loss, morbidity and mortality, although Ministry of Health reports show 20% reduction in outpatient cases over all these years (5). The other diseases affecting the country are mainly the non – communicable diseases of diabetes, cardiovascular disorders, cancers and chronic respiratory illnesses that have been forecast to increase to 17% in the next ten years (5).

Over 45,000 neonatal under five days and 28 days deaths are registered annually with 50% occurring within 24hours of life, according to the 2006 Uganda Demographic and Health Survey (UDHS). The leading cause of deaths among newborns are; measles, poliomyelitis, whooping cough, tetanus, tuberculosis, diphtheria, Hepatitis B, and

Heamophilus influenza (5). The leading direct causes of death among women are haemorrhage (26%), sepsis (22%), obstructed labour (13%), unsafe abortion (8%) and hypertensive disorders in pregnancy (6%) (5).

The core factors accountable for maternal deaths are mainly personal and structural; they include delayed care seeking, failure or delay in reaching the health center, and delay in providing institutional care. This is well described as the "three delays" where mothers have not been empowered to be good decision makers on issues concerning their health in the household. This is due to high levels of poverty leading to a lack of autonomy (8, 9). A lack of planning due to low levels of education has resulted in an over dependency that hinders women in reaching the health centers on time to receive appropriate treatment. There is also an inconsistency in the availability of medicines in the health centers with poor paid health workers so that there are delays in receiving adequate treatment in health centers. Birth readiness, includes identification of the expert birth medical consultant, availability of health centers, saved prepared money, ascertaining of means of transportation and extra arrangements for childbearing women. Research has shown that women who are natally equipped will more likely to be supported by health workers and birth assistants (10).

While some progress has been made in urban settings, rural areas have not changed much due to inaccessibility of the roads, collapsed referral system. There is insufficient funding for necessary expenditures like ambulance fuel and maintenance, as well as delay in receiving supplies. With a poor road network, there is a scarcity of blood availability, and there is an absence of emergency medicines (5).

On 1st March 2001, the Government of Uganda abolished user charges in public health centers enabling the poor to receive medical care and improve their health seeking behavior (7, 11). The abolition of user charges was aimed at achieving the Millennium Development Goals on a national, regional and international scale. The Ministry of Health together with private not-for- profit and private health partners have joined efforts to reduce the Maternal Mortality Ratio by 70 deaths per 1000000 live births from 2001 to 2006 and the Infant Mortality Rate by 14 deaths per 1000 live births in 2006 (5). Although modest success has been registered, the health system in Uganda still has some challenges that hamper achievement of quality primary health care targets. The early success would not have been achieved if Government of Uganda had not stop charging user fees for health care in public health centers where utilization was reported to have increased to 55% in 2002 from 26% in 2001. Essential drugs were often still inadequate (12).

Health services for Kampala Capital City Authority are situated within the five divisions. Each division has two health centers: City Hall and Kisenyi Health Centres for Kampala Central Division; Kawempe City Council and Komamboga health centers for Kawempe division; Kitebi and Kawala health center in Lubaga division; Kiruddu and Kisuggu health centres in Makindye Division; and Kiswa health center and Naguru hospital in Nakawa division.

Understanding the concept of sharing dimension of health services in health centers, and hospitals in KCCA.

With a small, inadequate budget in the health sector, KCCA is overwhelmed with the demand for quality and efficient health services by the citizens. The health centers are sharing ambulances, human capital, medication and medical equipment. Shared services in KCCA operate in such a way that they promote trust and good working relationships among medical workers and patients. There is improvement in clinical diagnosis and management. Coordination blind spots are avoided, and unnecessary wastage of time for patients visiting another health center are reduced. There is support the performance of necessary tests. There is an improvement in the availability of drugs, the quality of social welfare, and the reduction in the costs of the health service. Above all, lives are saved.

Quality healthcare services are delivered by health workers whose numbers and welfare are the key to success. There are unfilled vacancies for nurses countrywide; at health centers II, III and IV, there are vacancies of 53%-54% and 37% respectively (5). This state of affairs puts a huge burden to the already overstretched public health delivery system. This, in turn, affects access to effective health care which later transforms into an unreasonably high child and maternal mortality. Only 36% of children obtain basic vaccinations at the age of 1 year, 42% of mothers deliver under the supervision of a skilled health personnel while only 29% of children below 5 years with malaria receive treatment within 24 hours of onset of fever (13).

Information on the medical care needs of the people and the obstacles to medical care are required to assist in planning for the quality improvement of medical services for cities like Kampala. Health planning is of great significance as African countries are presently undergoing pressure to improve the quality of their health care services.

Shared service theory argues that partnership working can result in improved performance. Hence, greater efficiency can be achieved by working across organizational boundaries. Fundamental to this standpoint is the flexibility the arrangement brings. There are additional capital and increased capability of working across boundaries to solve priorities, and of diverting resources like 'decisions, talent, rewards and actions to where they are most needed' (14). Theorists who advocated for partnership working proposed that it provided a mechanism to maximize resources (15, 16). They also noted that partnership working negotiated for benefits of 'improved service delivery and policy success through the combined activities of agencies' (17). They argued that public-public partnerships could provide greater efficiency and reduce transaction costs.

Innovation was not just a good impression or a discovery, but 'an application of new processes, services and approaches

of delivery that resulted in important improvements in results, efficiency, effectiveness or quality' (18). Osborne and Brown (19) wrote that implementation was centered on innovation, 'involving and adaptation of new ideas within new settings'.

Objective

Considering the ongoing sharing of health service delivery among the ten health centers of KCCA, this study aimed at determining whether sharing of health services improved service quality. The study would assess how sharing of health services had affected the five dimensions of quality using SERVQUAL.

Service delivery performance could be enhanced by evaluating the status of shared services in the health sector using the three dimensions of cost, quality and service equity, (CQS). These dimensions of performance could provide a complete picture of what constitutes a shared service in KCCA. Within the general context, the study would only address service quality with the following question:

(i) Do shared service partnerships affect health service quality?

Only the service quality component of shared services performance would be measured as the remaining two dimensions were outside the scope of our study. Studies on the quality of health care in Uganda has been well covered (20-23) but there had been no prior study that set out to explore the effective performance of shared services and its impact on service quality in KCCA.

Methods

The ethical clearance was acquired from the Directorate of Public Health and Environment, and authorization was approved by Dr. Semuwemba James, the Acting Director. Administrative units included villages without health centers, in the survey as residents travel to the same health centers to receive medical treatment. Using cluster sampling, data was collected from KCCA employees and residents from different parishes were selected and head of households were chosen who the questionnaire was administered. Interviews were also conducted in two (2) villages per division to allow focus group discussion at the health centers (24).

Table 1: Administrative units of KCCA and Number of population with health centers

County	No. of sub-county	No. of parishes/ wards	No. of villages/Zones/ cells	No. of health centers	No. of population
KCCA	5	96	2959	8	2,489,442

Source: Uganda population and Housing Census Kampala Report November 2005 p.15

Basic sampling units were selected within groups of named clusters (parishes) and a survey performed in each stratum. There were 30 clusters, 20 voting age persons in each cluster. In the 1st stage, there was a random selection of clusters, wherein the entire population of Kampala was divided into small distinct geographic areas, as parishes and an approximate size of the population for each "parish" was found. At this stage, the primary sampling unit (PSU) was the parish. Afterwards, clusters were assigned randomly to parishes. For the 2nd stage, the random selection of voting age persons within clusters was completed using systematic random sampling. In summary, cluster sampling through a multi-stage sampling method was completed in 2 stages was used for the study.

The questionnaire required residents to help collect data on back ground information, their opinions on health services and service quality. A pilot study of the questionnaire was conducted at Kitebi township near the health center and the office of Local Council I village chairman. As a result, some minor changes were made in the translation of the script into the local language (Luganda) to avoid exclusion. Two research assistants administered the questionnaires face-to-face with the respondents.

The two research assistants who were residents of the two divisions of KCCA collected data from respondents geographically spread throughout the divisions. Arrangements were made with the respective Local council I chairmen to attend village meetings, and support to fill in the questionnaire was given to residents who could neither read nor write, or were not interested in filling the questionnaire, but who were willing to participate in a question answer session. Service quality was measured in five dimensions according to Parasuraman et al. (25) i.e., reliability, tangibility, assurance, empathy and responsiveness.

The limitation of this research was because it was possible to obtain a list of voters from the electoral commission for residents in KCCA. As a result, it was difficult to find individuals to select from randomly. Thus cluster sampling was employed. It was not easy to know the proportion of different inhabitants of KCCA to obtain a stratified sample.

Analysis

The questionnaire data was coded, entered and analyzed using Statistical Package for Social Science (SPSS) 16.0 software and a chi-squared test was performed to

determine the impact of shared health services on service quality, with a correction to show whether sharing health was predictable of service quality. Hierarchical regression was performed for robustness and to show the impact of sharing health services on service quality as advised by Danny CP et al. (26).

Results

A total of 723 people were interviewed and asked to participate in this study. All together 446 (64.5%) of the people interviewed consented, and 59.6% were men. See table 2 below.

Table 2: Demographic information of sample (N=446)

		n	%
Sex	Male	266	59.6
	Female	180	40.4
Education	Low	70	15.7
	Medium	200	44.8
	High	176	39.5
Age	Young	210	47.2
	Medium	202	45.4
	Old	33	7.4
Marital status	Married	234	52.5
	Single	141	31.6
	Separated	71	15.9
Employment sector	Government	132	29.6
	Private sector	102	22.9
	Self employed	156	35.0
	House wife	56	12.6
Length of stay in the division	Less than 5years	113	25.3
	6-10 years	117	26.2
	11-15 years	130	29.1
	More than 15 years	86	19.3

The table 3 indicated the subcomponent's response rate of service quality. The response rate includes only residents who made responses.

The frequency distribution of the responses for the dimensions under tangibility were 100% for medical equipment, 99.6% for health facilities and 99.3% for medical personnel. Regarding reliability, 99.8% said that the service was provided as promised, 99.6% said that the health centre staff were solving health needs while 99.6% said that the health centre staff were providing services at the promised time. Regarding responsiveness, 99.8% mentioned the assurance dimension, with the confidence shown by patients, 99.6% of residents said they felt safe, and 99.6% approved of consistency of the health services, while 99.8% said that the staff were courteous. Regarding empathy, the respondents commented on individualized health services (100%), the operating hours (99.1%) and their best interests (100%) with a total of 19 missing values.

Table 3: Distribution Response rate for service quality

Dependent Variable	Total number of respondents	Percentage (%)
Tangibility		
Medical equipment	446	100
Health facilities	444	99.6
Medical personnel	443	99.3
Reliability		
providing services as promised	445	99.8

Dependent Variable	Total number of respondents	Percentage (%)
Solving health needs	444	99.6
providing services at the promised Time	444	99.6
Responsiveness		
Prompt medical services	445	99.8
Assurance		
Confidence in patients	444	99.6
Residents feel safe	444	96.6
Consistency and courteous	445	99.8
Empathy		
Individualized health services	446	100
Operating hours	442	99.1
Best interests	446	100

Impact of shared health services on quality using SERVQUAL

According to (25), he describes service quality was the difference between customers' normative anticipations for the service and their observations of service performance. Service quality had been studied in five dimensions that include *reliability, empathy, responsiveness, assurance and tangibility* as shown in Table 4 below.

The study indicated that regarding tangibility, sharing health services significantly determined the number of modern medical equipments (p=0.000) and the number of medical personnel that had a neat and professional appearance (p=0.000) but not the number of visually appealing health facilities (p=0.386) as shown in Table 4 below.

The study indicated that regarding reliability, sharing health services significantly determined the number of health services provided as promised (p=0.000) and the number of medical services provided at the promised time (p=0.000) as shown in Table 4 below.

The study further revealed that sharing health services had a significant effect on the degree of responsiveness regarding promptness, assurance and empathy in the delivery of the services (p=0.000).

Table 4: Impact of sharing health services on quality according to SERVQUAL

Variable	Chi-square value	P-value
Tangibility		
Medical equipment	82.825	0.000
Health facilities	9.576	0.386
Medical personnel	44.928	0.000
Reliability		
providing services as promised	37.065	0.000
Solving health needs and system	10.814	0.289
providing services at the promised Time	232.189	0.000
Responsiveness		
Prompt medical services	204.698	0.000
Assurance		
Confidence in patients	131.858	0.000
Residents feel safe	48.846	0.000

Variable	Chi-square value	P-value
Consistency and courteous	242.381	0.000
Empathy		
Individualized health services	204.698	0.000
Operating hours	155.584	0.000
Best interests and willingness	110.463	0.000

The correlation test in Table 5 indicated a positive and significant relationship between sharing health services and some modern medical equipment (ρ=.175**) but a significant negative relationship between sharing health services and the number of medical personnel that had a neat and professional appearance (ρ=-.186**).

The relationship between sharing health services and the number of visually appealing health facilities was also positive (ρ=.128**) as shown in Table 5. The correlation test in Table 5 indicated a negative and significant relationship between sharing health services and number of health services provided as promised (ρ=-.281**), and a significant negative relationship between sharing health services and the number of medical services provided at the promised time (ρ=-.456**).

The study further revealed that sharing health services had a significant effect on the degree of responsiveness regarding promptness in delivery of the services (p=0.000). The correlation analysis indicated a negative relationship between sharing health services and the promptness in service delivery (ρ=-0.004) implying that the more the sharing of the health services, the more was the delay in service delivery.

Regarding assurance in service delivery, the study revealed that sharing health services had a significant effect on patients' confidence and safety and the level of consistency and courteousness of the employees were seen with p values that were less than 0.05 as shown in Table 5 below.

The correlation test in Table 5 showed a positive and significant relationship between sharing and patients' confidence (ρ=0.153**) implying that as more people shared services, the more their confidence was increased.

A significant negative relationship was revealed between sharing health services and patients' safety. The study also showed that the level of consistency and courtesy of the employees was reduced as the sharing of health services increased as indicated by a negative correlation coefficient (ρ=-0.440**) in Table 5.

Sharing health services also had a significant effect on service empathy. The study revealed that sharing health services significantly affected the individual attention given to patients' operating hours and the best interests of the patients was satisfied as indicated with p-values less than 0.05 in Table 5 below.

The correlation analysis revealed that regarding sharing health services, the attention that was given to an individual patient reduced (ρ=-0.57), and also satisfaction of patients' best interests (ρ= -0.147).

The impact of sharing health services on quality of the services

Ho: Sharing health services does not have any impact on service quality

Ha: Sharing health services improves service quality.

Service quality, measured in five dimensions as advocated by Parasuraman ert al., in reliability, tangibility, assurance, empathy and responsiveness, was found to be improving with sharing of the health services. It was shown in model 1, model 2 and model 3 that sharing health services had a positive effect with β1=2.972, β2=2.864 and β3=2.901; and had a significant impact on service quality, with all p values are less than 0.05. Therefore, the null hypothesis that the sharing of health services did not have any impact on service quality was rejected. The variables such as respondents' marital status, age, education level and willingness of medical personnel to work, were also found to have a significant positive effect on health service quality as shown in Table 6.

The relationship of health service quality and gender, basic equipment, modern health facilities, effective health systems and promptness in service deliver were found to be negative as shown in Table 6 below.

Discussion

The results suggested that the more healthcare services were shared, the more likely the health services quality would improve. This may imply that sharing could manifest in form of quality improvement. Theorists have argued that sharing services improved quality and this study was in line with past empirical studies. Triplett et al., (27) argued that sharing services reflected in cost advantages as well as well as in higher quality while Oakerson et al., (1) in his study confirmed that shared services led to improve quality services. This study had empirically tested service quality and found that shared services lead to improved quality in health services. These findings were also in line with Bergeron (2000) (28) who stated that one of the characteristics of shared services, was the constant pressure to provide a high quality services. However, in

Table 5: Correlation analysis between sharing health services on quality according to Parasuraman

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Spearman's rho	1.Shared services	1.000													
	2.Medical Equipment	.175(**)	1.000												
	3.Health facilities	.128(**)	.262(**)	1.000											
	4.Medical personnel	-.186(**)	0.078	-0.066	1.000										
	5.providing services as promised	-.281(**)	-0.059	.246(**)	.282(**)	1.000									
	6.Solving health needs &system	.100(*)	-.136(**)	-0.006	.428(**)	.260(**)	1.000								
	7.providing services at the promised Time	-.456(**)	.160(**)	.296(**)	.160(**)	0.012	-.250(**)	1.000							
	8.Prompt medical services	-0.004	.190(**)	0.081	-.094(*)	-.244(**)	-.314(**)	.451(**)	1.000						
	9.Patients' confidence	.153(**)	0.031	-0.068	0.091	.422(**)	.216(**)	-.291(**)	-.220(**)	1.000					
	10.patients' safety	-.119(*)	-.137(**)	.209(**)	.292(**)	.219(**)	.165(**)	0.035	-.105(*)	-.168(**)	1.000				
	11.Consistency & courteous	-.440(**)	-.149(**)	0.090	0.069	.132(**)	-.264(**)	.534(**)	.181(**)	-.185(**)	.107(*)	1.000			
	12.Individualized health services	-.157(**)	0.066	.130(**)	.292(**)	-0.063	.112(*)	.509(**)	.211(**)	0.033	.241(**)	.133(**)	1.000		
	13.Operating hours	0.049	.252(**)	.226(**)	-.312(**)	-.122(*)	-.215(**)	.295(**)	.364(**)	0.090	-.151(**)	.120(*)	.325(**)	1.000	
	14.Best interests and willingness	.147(**)	.234(**)	.230(**)	-0.068	-0.017	-0.019	.285(**)	.350(**)	-0.011	-0.052	-.138(**)	.275(**)	.531(**)	1.000

* implies that p value is less than 0.05

Table 6: Hierarchical regression analysis between sharing health services and service quality

	Model 1	Model2	Model 3
	B	β	β
(Constant)	2.972*	2.864*	2.901*
Sharing health services	0.426*	0.433*	0.420*
Gender	-0.118*	-0.111*	-0.115*
Married status	0.133*	0.136*	0.136*
Age	0.063*	0.064*	0.063*
Education level	0.045*	0.044*	0.046*
Medical equipments	-0.140*	-0.14*	-0.127*
Modern health facilities	-0.368*	-0.382*	-0.389*
Medical personnel	0.045	0.043	-0.429*
Solving health needs	-0.455*	-0.454	-
Prompt medical services	-0.035	-	-
Best interests	0.194*	0.213*	0.212*
R-squared	0.142	0.141	0.138
F-Value	6.170*	6.931*	8.321*

* implies that p value is less than 0.05

KCCA the model operated well with increased supervision which resulted in improved responsiveness, reliability, care for patients, availability of basic medical equipment, health workers' appearance and increased confidence and safety of residents.

The study had potential limitations. Since KCCA was still new and reorganizing its structures, a better perspective of shared services would be needed in future to draw final conclusions before replication of the model. Shared services are highly dependent on how they are implemented and are therefore not easy to generalize. Rather it is best when they are taken on a case by case basis. A strict Public Health Act affects smooth operations of shared services, and hence there is a need for policy guidance on shared health services.

Conclusion

This research aimed to assess whether shared health services affected service quality and the applied sharing model. No prior research had been undertaken to evaluate this. This study found that sharing health services among health centers and working together to solve societal health problems, had a significant positive impact on service quality although the standards were far from optimal. The study further revealed that health centers were sharing ambulance services, drugs and medical equipments in order to improve service quality. KCCA should encourage sharing of health services.

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